

0108-354 US-1
Amendment dated 11/22/2011

10/798,845

03100199aa
Reply to office action mailed 8/22/2011

REMARKS

Claims 1 and 3-15 are currently pending in the application. By this amendment, claim 1 is amended and claims 16-18 are added for the Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, with an indication of the current status of each.

In prior discussions with the Examiner consideration was given to a limitation adding a safety function to the invention. The present office action does not address this limitation, and the grounds of rejection are the same as in the Office Action mailed 6/24/2010. The foregoing amendment therefore places the safety function limitation in separate dependent claims 17 and 18 for the Examiner's consideration. In the interests of brevity, the applicant's remarks in filings dated 12/27/2010 and 3/25/2011, responsive to the grounds of rejection in the 6/24/2010 Office Action, are incorporated herein by reference and are believed to be responsive to the arguments made by the Examiner in the present Office Action.

The Examiner, in "Response to Arguments," makes several points. One point concerns whether Nijebanning's use of a standard Bowden cable serves for one skilled in the art to connect Nijebanning with Woo. The Examiner argues that both references teach "remote" (whether "wired" or not). It is acknowledged that a standard Bowden cable is effective to control the locking device. However, Applicant maintains that one skilled in the art would not connect the Nijebanning Bowden cable control with the control mechanism in Woo absent hindsight. A second point raised by the Examiner concerns the indicator mechanism found in Woo. As will be discussed in greater detail below, Woo teaches more narrowly than asserted by the Examiner. Woo teaches a signal indicating to a vehicle owner that a wheel lock has been released. The wheel lock is dissimilar to the locking prosthetic device of the present invention, and the vehicle owner is dissimilar to the user of the prosthetic device. Thus, the connection between Nijebanning and Wood remains dependent upon the thin reed of control, which indicates hindsight.

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In a third point, the Examiner suggests that “Applicant has made an improper assumption about the mental capacity of each and every user of the device. Applicant has no evidence that the user would or would not know whether the device is locked without an indicator.” This is not a correct assessment of the Applicant’s point. As previously stated, the inventors observed that “[i]f the locked position is not reached and the patient fails to notice this, there is a considerable risk of an accident happening since, when a load is placed on the orthotic knee joint that is assumed to be locked, the latter may buckle, and the buckling cannot be controlled by the patient because of the weakness of the joint.” It is not relevant whether this risk would befall “each and every user of the device.” The point of the invention to provide protection in the event that a user mistakenly assumes that the prosthetic device is in the locked position.

In summary, Applicant maintains that the connection between Nijenbanning and Woo is based on hindsight.

However, the claims have been amended to address this ground of rejection in a another way. The Examiner maintains rejection of claims 1, 3-5, 7, and 11-14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,979,304 to Nijenbanning et al. (“Nijenbanning”) in view of U.S. Patent No. 6,462,431 to Woo.

It is clear that Nijenbanning discloses an orthopedic aid that is used for walking and for providing a support function for the human body. There is a hinge and a locking device for locking the hinge. The locking device is actuated by a control element 20, which, however, is not disclosed as being an electromechanical control element. Instead there is disclosed a displacement mechanism that can be operated by hand (col. 6, lines 33 to 35). Therefore, the Examiner's statement on page 4, lines 1-2, that Nijenbanning discloses a locking device that “actuated ... electromechanically” is not correct. On the contrary, Nijenbanning discloses a prior art from which the present invention started. That is, with respect to control of unlocking by the user, Nijenbanning discloses use of the conventional Bowden cable. This is mechanical, not electromechanical.

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Woo discloses a bicycle wheel locking apparatus which is unlocked electromechanically by a remote control so that the unlocking can be performed from a remote place, without having to bend down or mechanically unlock the device in the rain. It should be noted that the Woo device is limited to unlocking, and if the device is already unlocked the remote control signal is ignored (col. 5, lines 10-15). Figure 1 clarifies that the remotely actuated locking device has a locking bar 10 (obviously for preventing a wheel of the bicycle from rotating). Figure 1 shows the locking bar in the locked state. A spring is loaded so as to move the locking bar backwards if the stopper is retracted from the locking position by means of a coil action.

The socket board 20 has a melody chip for generating an alarm tone and has an LED. Col. 3, lines 60 to 65 discloses the functioning of the melody chip. It generates the alarm tone for indicating release of the locking state by operation of the controller. Thereby it is clarified that Woo discloses an alarm tone only if the lock has been released. The advantage of the function is explained in col. 5, lines 50 to 56: if the release of the locking device is initiated by remote control, e. g. in the dark, the noise and the light emitted from the LED conveniently indicate where the bicycle is located.

It is true that Woo discloses a detection arrangement for the detection of the position of the locking bar. The object for this detection is described in col. 5, lines 5 to 15. If the locking state is detected the controller 110 of the circuit board 20 initiates the relay action for releasing the locking bar. If the locking state is not detected (i.e. because the lock was already in the released state) the controller ignores the release requirement and "completes the release operation" which obviously means that the release operation is terminated (i.e. the "No" option from locking state test 314 in Figure 4) without outputting the relay control signal (step 316 of Figure 4) or sending out the LED signal and the alarm tone (step 318 in Figure 4).

Therefore, Woo does not disclose sending a warning signal when the locking state is achieved. A warning signal is sent only if the locking state is released, and

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then only when released by the deliberate action of the user through user operation of the remote control. This is exactly contrary to the operation of the present invention, where the warning is not responsive to user operation of a control. In the present invention the control operates automatically, as claimed.

It is clear from the disclosure why Woo adopts this strategy. The problem in the prior art addressed by Woo is non-use of the lock because it is “troublesome” to unlock the lock (col. 1, lines 22-25), especially in the dark or in the rain (col. 1, lines 40-47). Providing the warning signal only when the lock has been placed in the locked state is an added incentive to use the lock in the first place.

Consequently, the foregoing amendment restricts claim 1 to a signaling arrangement which emits a signal only when locking has taken place. This is important for the user of the orthopedic device after sitting with the orthopedic device in the released state. When the user stands up, the two parts of the orthopedic aid connected by the hinge should reach the extended position and thereby lock the hinge. This is done regularly, but it is possible that what is done regularly may not always achieve full extension and locking of the hinge. To avoid risk of an accident in this circumstance (page 1, line 35, to page 2, line 3), what is added by the present invention, novel in the prosthetic arts, is that the user is provided with a specific signal acknowledging that the locking of the locking device has actually been performed. The invention detects performance of the locking operation and then sends the signal, automatically. To further distinguish from the linear locking mechanism described in Woo, claim 1 is limited to a rotational movement of the parts of the orthopedic aid relative to one another.

Furthermore, a new claim 16 is added, directed to the detecting of unlocking by the detection means, as described at page 3, lines 9-12: upon an inadvertent unlocking a warning signal is generated. This is contrary to the teaching of Woo because the detection of the locking state by Woo is only made upon an unlocking signal generated by user operation of a remote control. There is no disclosure in Woo of a warning signal in case the lock is inadvertently unlocked. This, however, is the

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case for the present invention in order to warn the wearer of the orthopedic aid when the lock has been inadvertently unlocked, which could otherwise result in an accident.

Thus, in both claims 1 and 16, the teaching of Woo requires that the signal be generated by user operation of a remote control, whereas the present invention the signal is produced automatically.

The Examiner also maintains rejection of claims 6, 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over Nijenbanning and Woo in view of U.S. Patent No. 6,184,797 to Stark et al. ("Stark") and further in view of U.S. Patent No. 7,235,058 to Doty. The Examiner maintains rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over Nijenbanning, Woo, Stark and Doty as applied to claims 1, 6 and 8, and further in view of U.S. Patent Application Publication No. 2002/0183673 to Naft et al. ("Naft"). The Examiner maintains rejection of claim 15 under 35 U.S.C. §103(a) as being unpatentable over Nijenbanning and Woo as applied to claims 1, 11 and 13, and further in view of Stark. Since these grounds of rejection pertain to claims that depend from claims now believed to be in allowable form, these grounds of rejection are also overcome.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1 and 3-18 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

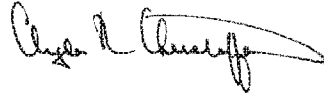
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Please charge any deficiencies in fees and credit any overpayment of fees to
Attorney's Deposit Account No. 50-2041.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Clyde R Christofferson", with a long, sweeping horizontal stroke extending to the right.

Clyde R Christofferson
Reg. No. 34,138

Whitham, Curtis, Christofferson & Cook, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
703-787-9400
703-787-7557 (fax)

Customer No. 30743